Appl. No.: 10/772,690 Amdt. dated 05/25/2007

Reply to Office action of 02/26/2007

## Amendments to the Claims:

1. (Currently Amended) A[[n]] <u>cryomilled</u> aluminum alloy comprising: 89 atomic% to 99 atomic% aluminum;

1 atomic% to 11 atomic% of a secondary metal selected from the group consisting of magnesium, lithium, silicon, titanium, zirconium, and combinations thereof; and

up to about 10 atomic% of a tertiary metal selected from the group consisting of Be, Ca, Sr, Ba, Ra, Sc, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, Y, Nb, Mo, Tc, Ru, Rh, Pd, Ag, Cd, W, and combinations thereof;

less than 0.5 vol% of refractory materials, said refractory materials comprising oxynitrides in combination with at least one or more of oxides, borides, carbides, or carbo nitrides; at least 0.3% nitrogen by weight that is in the form of aluminum nitride and one or more of magnesium nitride, lithium nitride, silicon nitride, titanium nitride, zirconium nitride, and combinations thereof, and

wherein the alloy has an average grain size of less than 0.5 µm, and wherein the alloy is cryomilled in a substantially oxygen free atmosphere so that the alloy is substantially free of oxy-nitrides, oxides, and combinations thereof.

- 2. (Original) The aluminum alloy of Claim 1, wherein the secondary metal is magnesium.
- 3. (Original) The aluminum alloy of Claim 2, wherein the magnesium is present in an amount of 4 weight% to 10 weight% of the alloy.
- 4. (Currently Amended) The aluminum alloy of Claim 3, wherein aluminum is present in an amount of 82 weight% to 96 weight%, and further comprising a tertiary metals are selected from the group consisting of zinc, copper, cobalt, zirconium, and nickel.
- 5. (Original) The aluminum alloy of Claim 4, comprising 6 weight% to 9 weight% zinc, less than 2 weight% copper, less than 2 weight% cobalt, less than about 0.2 weight% zirconium, and less than about 0.2 weight% nickel.

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- 6. (Original) The aluminum alloy of Claim 1, wherein the alloy has a stable grain structure up to at least 850°F.
- 7. (Original) The aluminum alloy of Claim 1, wherein the alloy is in the form of an extrusion.
- 8. (Original) The aluminum alloy of Claim 1, wherein the alloy is in the form of a forging.
- 9. (Original) The aluminum alloy of Claim 1, wherein the alloy comprises less than about 0.5 volume% refractory material.
- 10. (Previously Presented) A[[n]] <u>cryomilled</u> aluminum alloy consisting essentially of:

89 atomic% to 99 atomic% aluminum;

1 atomic% to 11 atomic% of a secondary metal selected from the group consisting of magnesium, lithium, silicon, titanium, zirconium, and combinations thereof; and

up to about 10 atomic% of a tertiary metal selected from the group consisting of Be, Ca, Sr, Ba, Ra, Sc, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, Y, Nb, Mo, Tc, Ru, Rh, Pd, Ag, Cd, W, and combinations thereof; and,

at least 0.3% by weight of nitrogen that is in the form of aluminum nitride and one or more of magnesium nitride, lithium nitride, silicon nitride, titanium nitride, zirconium nitride, and combinations thereof, and wherein the alloy is cryomilled in a substantially oxygen free atmosphere so that the alloy is substantially free of oxy-nitrides, oxides, and combinations thereof, and wherein the alloy is substantially free of refractory materials

at least 0.3% nitrogen by weight, and less than 0.5 vol% refractory materials, and said refractory materials comprising oxy-nitrides in combination with at least one of oxides, borides, carbides, or carbo-nitrides.

11. (Original) The alloy of Claim 10 wherein the alloy has an average grain size of less than  $0.5~\mu m$ .